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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/836,236 | 04/18/2001 | Hisao Yamada | Q64017 | 6436 |

7590 04/06/2004

SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC
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WASHINGTON, DC 20037-3213

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| EXAMINER |
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CHU, JOHN S Y

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| ART UNIT | PAPER NUMBER |
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1752

DATE MAILED: 04/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 09/836,236 | Applicant(s) YAMADA ET AL. | |
| | Examiner John S. Chu | Art Unit 1752 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-12 and 21-28 is/are allowed.
- 6) ☒ Claim(s) 13-20 and 29-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office action is in response to the amendment filed January 12, 2004.

1. The rejection 35 U.S.C. 102(e) as being clearly anticipated by YAMADA et al '359 is **withdrawn** in view of the arguments by applicant.

Double Patenting

2.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 13-20 and 29-32 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 2-17 of U.S. Patent No. 6,346,359. Although the conflicting claims are not identical, they are not patentably distinct from each other because the currently claimed application to the recording material recites the following:

13. (Currently Amended) A recording material comprising a support and at least one recording layer disposed thereon containing a diazo compound and a coupler which reacts with the diazo compound for developing color, wherein the coupler has a leaving group at a coupling position thereof, and wherein the coupler is not a naphthol.

14. (Previously Presented) A recording material comprising a support and at least one recording layer disposed thereon containing a diazo compound and a coupler which reacts with the diazo compound for developing color, wherein the coupler has a leaving group at a coupling position thereof, the diazo compound and the coupler have a faster coupling reaction rate constant therebetween, measured by mixing equivalent amounts of an ethyl acetate solution containing an 8×10^{-5} mole concentration of the diazo compound and an ethyl acetate solution containing an 8×10^{-3} mole concentration of the coupler and a base with a stopped flow measurement device and by measuring change over time of an absorbance of the produced colorant and applying the resultant value to the following formula (1), than in a case of a coupler having a hydrogen atom at a coupling position thereof, and the coupling reaction rate constant k therebetween is at least 0.1 s^{-1} :

$$D \{\text{colorant}\}/dt = k \{\text{diazo compound}\} \quad \text{formula (1)}$$

wherein k denotes the coupling reaction rate constant (s^{-1}), t denotes time (s), $\{\text{colorant}\}$ denotes a mole amount of the produced colorant, and $\{\text{diazo compound}\}$ denotes an initial mole amount of the diazo compound (mol).

The claimed recording material recites in the recording layer a diazo and a coupler wherein the coupler has a leaving group at a coupling position and specifies that it can't be a naphthol.

Claim 2 of U.S Patent 6,346,359 recites in formula (1) a coupler having a leaving group (L) at a coupling position, which meets the claimed coupler as recited in claim 13. The diazonium compound is disclosed in Claim 2 of the U.S. patent and wherein upon coupling with a phenol coupler will form an azo dye with the coupler.

The coupler and diazonium compounds disclosed in claims 2-17 of U.S. Patent 6,346,359(YAMADA et al) meet the limitations of claim 14, which recites a recording material, wherein the coupling reaction is characterized by having a faster reaction rate constant than a coupler having a hydrogen group at the coupling position. This recitation is a functional limitation.

The reaction rate is not explicitly disclosed by the claims in the U.S. patent to YAMADA et al.

Because the leaving groups on the couplers as claimed are the same as those coupler leaving groups as disclosed in the U.S. Patent, the examiner asserts that the claimed invention and the reaction rate constant as recited is inherently present in the U.S. patent 6,346,359 (YAMADA et al).

It would have been *prima facie* obvious to one of ordinary skill in the art of heat recording materials to use and duplicate the claimed recording material in YAMADA et al having the diazonium compound and coupler compound with a specified leaving group and reasonably expect to have a heat-recording material which is excellent in hue and color density while meeting the claimed faster coupling reaction than a coupling reaction having a hydrogen composition of the claimed invention.

The leaving groups on the coupler of YAMADA et al are substantially the same as those disclosed in the application and because the properties of the compounds are inseparable from the compound, upon reaction the faster reaction rate constant would be expected.

These claims are not allowed and would extend the grant to the invention of U.S. Patent 6,346,359 (YAMADA et al).

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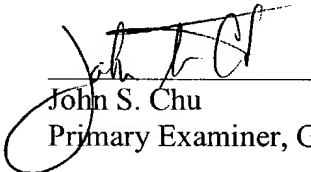
4. Claims 1-12, and 21-28 are allowed.

None of the prior art references disclose the claimed method wherein for forming an azo colorant which has a faster coupling reaction rate constant than a azo dye forming reaction between a diazonium and a coupler having a hydrogen at a coupling position.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Chu whose telephone number is (703) 308-2298. The examiner can normally be reached on Monday - Friday from 9:30 am to 6:00 pm.

The fax phone number for this Group is (703) 305-7718.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.


John S. Chu
Primary Examiner, Group 1700

J.Chu
April 3, 2004